



DONGFENG CUMMINS ENGINE
PERFORMANCE CURVE

Engine Model
EQB140-20

Curve No.
FR91314

CPL Code
8493

Date
June

Displacement: 3.9L

Bore: 102mm

Stroke: 120mm

Fuel System: Boxu Pump

Cylinders: 4 Cylinders, in Line

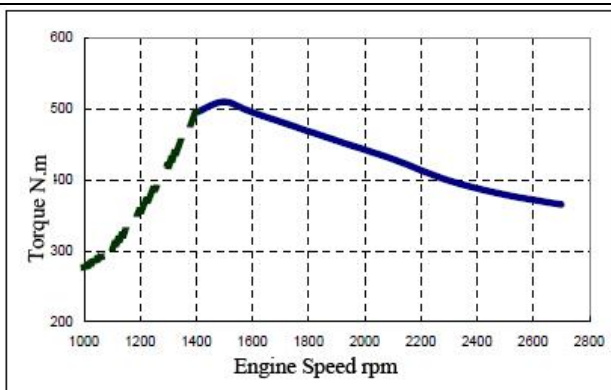
Advertised Power: 103kW@2700 rpm

140HP@2700 rpm

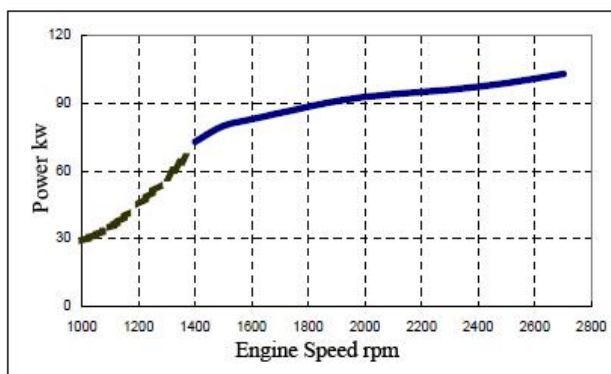
Peak Torque: 502N.m@1500 rpm

Aspiration: Turbocharged & Inter-cooled

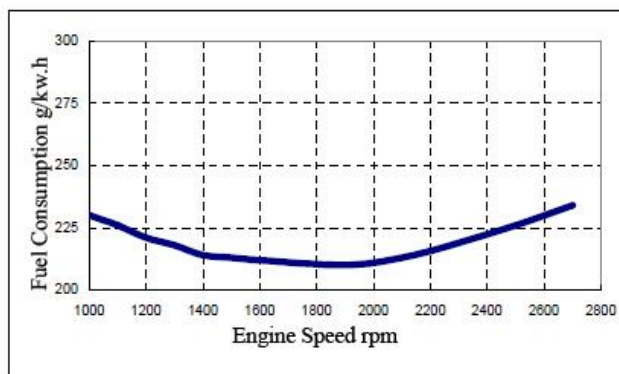
Rating Type: Continuous



Torque	
rpm	N.m
1000	276
1100	305
1200	356
1300	420
1400	495
1500	510
1600	495
1900	455
2100	429
2300	399
2500	379
2700	365



Power	
rpm	kW
1000	29
1100	35
1200	45
1300	57
1400	73
1500	80
1600	83
1900	91
2100	94
2300	96
2500	99
2700	103



Fuel Consumption	
rpm	g/kW.h
1000	230
1100	226
1200	221
1300	218
1400	214
1500	213
1600	212
1900	210
2100	213
2300	219
2500	226
2700	234

Performance data obtain under normal conditions, according to GB/T18297-2001 test conditions

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Diesel Engine for Vehicle Performance Data

Technical Request

Aspiration:	Turbocharged & Inter-cooled
Emission Certification	GB17691/GB14761
Net Weight(Dry)-Engine Only-Average:	343kg
Net Weight(Dry)-Engine with Heat Exchanger-Average	362kg
Compression Ratio:	17.3:1
Distance from Center of Gravity to the Front Engine Block	269mm
Distance from Center of Gravity to the Crankshaft Centerline	168mm
Maximum Bending Moment at Rear Face of Block	1356 N.m
Limit load of Thrust Bearing:	
Instantaneous maximum:	3781 N
Continuous maximum	1780 N
Instantaneous inertia at Rotating: (without Flywheel)	0.143kg.m ²

Performance Characteristic

Idle Speed:	750rpm
Maximum non-load speed:	3150rpm
Over speed performance(within 15 seconds):	4200rpm
Maximum Altitude at Continuous Operation:	3000m
The clutch torque @ 800rpm:	250N.m
When install exhaust braking:	
The limit exhaust pressure of Turbocharger export @3150 rpm	414 kPa
Maximum power of Exhaust brake	112kw

Engine Speed (RPM)	Oil Pressure (kPa)	Air Flow (m ³ /min)	Air Pressurized		Exhaust Flow (m ³ /min)	Exhaust Temperature (°C)	Fuel Consumption (l/hr)	Heat Energy Loss	
			Flow (kg/min)	Pressure kPa				Coolant (KW)	Air (KW)
2700	400	12.4	14.3	130	35	500	29	58	24
1500	350	7.7	8.8	110	21	520	21	40	15

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All values within ±5%.

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Diesel Engine for Vehicle Performance Data

LUBRICATION SYSTEM

Oil Sump Capacity:	
Upper Limit:	9.5L
Lower Limit:	7.5L
Capacity of the whole system:	10.9 L

AIR SYSTEM

Air intake maximum temperature rise from Outside to the Turbocharger	15°C
The allowable maximum restriction when use Dry Air Filter	
Medium: kPa (mmH2O)	2.9(300)
Heavy: kPa (mmH2O)	3.7(380)
The allowable maximum restriction when use dirty Filter Element: kPa (mmH2O)	6.2(635)

TURBOCHARGED & INTERCOOLED

Environment design parameters	Stage II	Stage III
The highest temperature of intake manifold:	55°C	50°C
Temperature after the cooling of the intercooler	25°C	20°C
The maximum allowable cold pressure difference before and after the intercooler:	16.7(125) kPa(mmHg)	
The allowable minimum diameter of the intake manifold:	65mm	

EXHAUST SYSTEM

The maximum exhaust resistance with exhaust manifold and muffler: kPa(mmHg)	10.0(75)
The allowable minimum diameter of the exhaust manifold:	75mm
The allowable maximum static bending moment of the Turbocharger exhaust flange	27N.m

FUEL SYSTEM

The maximum resistance of Fuel Pump when use clean filter	150mmHg
Maximum fuel return oil resistance:	520mmHg

COOLING SYSTEM

Engine Coolant Capacity:	7.0 L
The range of temperature adjustment for the Thermostat:	83-95 °C
The maximum pressure of Coolant(without pressure cap and thermostat closed)	276kPa
The highest coolant temperature (at engine exports):	100°C
Maximum degassing time	25mins
Maximum coolant flow to accessories	41 L/min
The lowest coolant temperature	70°C
Minimum speed of water-filling	19 l/min
Minimum coolant expansion volume relative to the system capacity	6 %

Water tank capacity without water expansion	5 L	
Minimum allows pressure of pressure cap:	50 kPa	
The alarm temperature of the coolant	100°C	
The open temperature of louver	N/A	
Cooling ability of cooling system:	Stage II	Stage III
The limit environmental temperature at rated speed	45 °C	42 °C
The limit environmental temperature at peak torque	40°C	37°C
24V ELECTRICAL SYSTEM		
Maximum resistance of starting circuit	0.002Ω	
The cold start current when engine and the clutch separate: CCA	12V 500	24V 250
COLD STARTING SYSTEM		
The lowest cold starting temperature without auxiliary starting device	-10°C @120rpm	
The lowest cold starting temperature with starting device	-25°C @ 110rpm	
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<i>All data is subject to change without notice- contact Cummins for most recent data.</i>		